

SEQUENCE LISTING

<110> Walke, D. Wade
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Abuin, Alejandro
Zambrowicz, Brian
Sands, Arthur T.

<120> Novel Human Transferase Proteins and
Polynucleotides Encoding the Same

<130> LEX-0107-USA

<150> US 60/170,408
<151> 1999-12-13

<160> 37

<170> FastSEQ for Windows Version 4.0

<210> 1
<211> 1521
<212> DNA
<213> Homo sapiens

<400> 1

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| cttggcatgg | ttggattttat | gttcggaaagc | atttcccttc | aaggcgtgtt | cagcagcccc | 120 |
| aagccagaaac | tcccaagtcc | tgccccgggt | gtccagaagc | tgaagcttct | gcctgaggaa | 180 |
| cgtctcagga | acctcttttc | ctacgatgga | atctggctgt | tcccgaaaaaa | tcagtgc当地 | 240 |
| tgtgaagcca | acaagagca | gggaggttac | aacttcagg | atgcctatgg | ccagagcgac | 300 |
| ctcccagcg | tgaaagcgag | gagacaggt | gaatttgaac | actttcagag | gagagaaggg | 360 |
| ctgccccccc | cactgcccct | gctggtccag | cccaacctcc | cctttggta | cccagtccac | 420 |
| ggagtggagg | tgatgcccct | gcacacggtt | cccatcccg | gcctccagtt | tgaaggaccc | 480 |
| gatccccccg | tctatgaggt | caccctgaca | gcttctctgg | ggacactgaa | cacccttgct | 540 |
| gatgtcccg | acagtgtgg | gcagggcaga | ggccagaagc | agctgatcat | ttctaccagt | 600 |
| gaccggaagc | tgttgaagtt | catttttcag | cacgtgacat | acaccagcac | gggttaccag | 660 |
| caccagaagg | tagacatagt | gagtctggag | tccaggtcct | cagtggccaa | gttccagtg | 720 |
| accatccccc | atccatgtcat | acccaagcta | tacgaccctg | gaccagagag | gaagctcaga | 780 |
| aacctggta | ccattgtac | caagacttc | ctccggcccc | acaagctcat | gatcatgctc | 840 |
| cgaggtattc | gagagtatta | cccagactt | accgtatag | tggctgatga | cagccagaag | 900 |
| cccctggaaa | ttaaagacaa | ccacgtggag | tattacacta | tgcctttgg | gaagggttgg | 960 |
| tttgcgtggta | ggaacctggc | cataatctcg | gtcaccacca | aatacgttct | ctgggtggac | 1020 |
| gatgattttc | tcttcaacga | ggagaccaag | attgaggtgc | tgggtggatgt | cctggagaaa | 1080 |
| acagaactgg | acgtggtagg | cgccagtg | ctgggaaatg | tgttccagtt | taagttgttg | 1140 |
| ctggAACAGA | gtgagaatgg | ggcctgcctt | cacaagagga | tgggattttt | ccaaacccctg | 1200 |
| gatggcttcc | ccagctgcgt | ggtgaccagt | ggcgtggta | acttcttct | ggcccacacg | 1260 |
| gagcgactcc | aaagagtgg | cttgcattcc | cgcctgcac | gagtggctca | ctcagaattc | 1320 |
| ttcattgtat | ggctaggggac | cctactcg | gggtcatgcc | cagaagtgtat | tataggtcac | 1380 |
| cagtctcggt | ctccagtgg | ggactcagaa | ctggctgcc | tagagaagac | ctacaataca | 1440 |
| taccggtcca | acaccctcac | ccgggtccag | ttcaagctgg | cccttcacta | cttcaagaac | 1500 |
| catctccaat | gtgccgcata | a | | | | 1521 |

<210> 2
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<212> PRT
<213> Homo sapiens

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Leu Gln Ala Val Phe Ser Ser Pro Lys Pro Glu Leu Pro Ser Pro Ala
35 40 45
Pro Gly Val Gln Lys Leu Lys Leu Leu Pro Glu Glu Arg Leu Arg Asn
50 55 60
Leu Phe Ser Tyr Asp Gly Ile Trp Leu Phe Pro Lys Asn Gln Cys Lys
65 70 75 80
Cys Glu Ala Asn Lys Glu Gln Gly Gly Tyr Asn Phe Gln Asp Ala Tyr
85 90 95
Gly Gln Ser Asp Leu Pro Ala Val Lys Ala Arg Arg Gln Ala Glu Phe
100 105 110
Glu His Phe Gln Arg Arg Glu Gly Leu Pro Arg Pro Leu Pro Leu Leu
115 120 125
Val Gln Pro Asn Leu Pro Phe Gly Tyr Pro Val His Gly Val Glu Val
130 135 140
Met Pro Leu His Thr Val Pro Ile Pro Gly Leu Gln Phe Glu Gly Pro
145 150 155 160
Asp Ala Pro Val Tyr Glu Val Thr Leu Thr Ala Ser Leu Gly Thr Leu
165 170 175
Asn Thr Leu Ala Asp Val Pro Asp Ser Val Val Gln Gly Arg Gly Gln
180 185 190
Lys Gln Leu Ile Ile Ser Thr Ser Asp Arg Lys Leu Leu Lys Phe Ile
195 200 205
Leu Gln His Val Thr Tyr Thr Ser Thr Gly Tyr Gln His Gln Lys Val
210 215 220
Asp Ile Val Ser Leu Glu Ser Arg Ser Ser Val Ala Lys Phe Pro Val
225 230 235 240
Thr Ile Arg His Pro Val Ile Pro Lys Leu Tyr Asp Pro Gly Pro Glu
245 250 255
Arg Lys Leu Arg Asn Leu Val Thr Ile Ala Thr Lys Thr Phe Leu Arg
260 265 270
Pro His Lys Leu Met Ile Met Leu Arg Ser Ile Arg Glu Tyr Tyr Pro
275 280 285
Asp Leu Thr Val Ile Val Ala Asp Asp Ser Gln Lys Pro Leu Glu Ile
290 295 300
Lys Asp Asn His Val Glu Tyr Tyr Thr Met Pro Phe Gly Lys Gly Trp
305 310 315 320
Phe Ala Gly Arg Asn Leu Ala Ile Ser Gln Val Thr Thr Lys Tyr Val
325 330 335
Leu Trp Val Asp Asp Asp Phe Leu Phe Asn Glu Glu Thr Lys Ile Glu
340 345 350
Val Leu Val Asp Val Leu Glu Lys Thr Glu Leu Asp Val Val Gly Gly
355 360 365
Ser Val Leu Gly Asn Val Phe Gln Phe Lys Leu Leu Glu Gln Ser
370 375 380
Glu Asn Gly Ala Cys Leu His Lys Arg Met Gly Phe Phe Gln Pro Leu
385 390 395 400

Asp Gly Phe Pro Ser Cys Val Val Thr Ser Gly Val Val Asn Phe Phe
 405 410 415
 Leu Ala His Thr Glu Arg Leu Gln Arg Val Gly Phe Asp Pro Arg Leu
 420 425 430
 Gln Arg Val Ala His Ser Glu Phe Phe Ile Asp Gly Leu Gly Thr Leu
 435 440 445
 Leu Val Gly Ser Cys Pro Glu Val Ile Ile Gly His Gln Ser Arg Ser
 450 455 460
 Pro Val Val Asp Ser Glu Leu Ala Ala Leu Glu Lys Thr Tyr Asn Thr
 465 470 475 480
 Tyr Arg Ser Asn Thr Leu Thr Arg Val Gln Phe Lys Leu Ala Leu His
 485 490 495
 Tyr Phe Lys Asn His Leu Gln Cys Ala Ala
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<210> 3
 <211> 399
 <212> DNA
 <213> Homo sapiens

<400> 3
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 gaatgtgtct cggggacgcc cgagtgtggg aatcggtcg ggagtgcggg cttcgggat 120
 ctctgcttgg aactcagagg cgctgaccca gcctggggcc cgtttgcgc ccacgggagg 180
 agccgcccgc agggctcgag atttctgtgg ctccctcaaga tattggtcat aatcctggta 240
 cttggcattt tgggatttat gttcggaaagc atgttccttc aagcagtgtt cagcagcccc 300
 aagccagaac tcccaagtcc tgccccgggt gtccagaagc tgaagcttct gcctgaggaa 360
 cgtctcagga acctctttc ctacgatgga atctggta 399

<210> 4
 <211> 132
 <212> PRT
 <213> Homo sapiens

<400> 4
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 Ser Arg Gly Arg Glu Cys Val Ser Gly Thr Pro Glu Cys Gly Asn Arg
 20 25 30
 Leu Gly Ser Ala Gly Phe Gly Asp Leu Cys Leu Glu Leu Arg Gly Ala
 35 40 45
 Asp Pro Ala Trp Gly Pro Phe Ala Ala His Gly Arg Ser Arg Arg Gln
 50 55 60
 Gly Ser Arg Phe Leu Trp Leu Leu Lys Ile Leu Val Ile Ile Leu Val
 65 70 75 80
 Leu Gly Ile Val Gly Phe Met Phe Gly Ser Met Phe Leu Gln Ala Val
 85 90 95
 Phe Ser Ser Pro Lys Pro Glu Leu Pro Ser Pro Ala Pro Gly Val Gln
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 115 120 125
 Asp Gly Ile Trp
 130

<210> 5
 <211> 219

<212> DNA

<213> Homo sapiens

<400> 5

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| cttggcattg | ttggatttat | gttcggaaagc | atttccttc | aaggcgtgtt | cagcagcccc | 120 |
| aagccagaac | tcccaagtcc | tgccccgggt | gtccagaagc | tgaagcttct | gcctgaggaa | 180 |
| cgtctcagga | accttttcc | ctacgatgga | atctggtga | | | 219 |

<210> 6

<211> 72

<212> PRT

<213> Homo sapiens

<400> 6

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Thr | Ser | Gly | Gly | Ser | Arg | Phe | Leu | Trp | Leu | Leu | Lys | Ile | Leu | Val |
| 1 | | | | | 5 | | | | | 10 | | | | 15 | |
| Ile | Ile | Leu | Val | Leu | Gly | Ile | Val | Gly | Phe | Met | Phe | Gly | Ser | Met | Phe |
| | | | | | | 20 | | | 25 | | | | 30 | | |
| Leu | Gln | Ala | Val | Phe | Ser | Ser | Pro | Pro | Glu | Leu | Pro | Ser | Pro | Ala | |
| | | | | | | | 35 | | 40 | | | 45 | | | |
| Pro | Gly | Val | Gln | Lys | Leu | Lys | Leu | Leu | Pro | Glu | Glu | Arg | Leu | Arg | Asn |
| | | | | | | 50 | | 55 | | 60 | | | | | |
| Leu | Phe | Ser | Tyr | Asp | Gly | Ile | Trp | | | | | | | | |
| | | | | | | 65 | | 70 | | | | | | | |

<210> 7

<211> 555

<212> DNA

<213> Homo sapiens

<400> 7

| | | | | | | |
|-------------|------------|-------------|------------|------------|-------------|-----|
| atggggagcg | ctggctttc | cgtggaaaa | ttcacgtgg | agggtggctc | tcgcggccgg | 60 |
| gaatgtgtct | cggggacgcc | cgagtgtgg | aatcggtcg | ggagtgcggg | cttcggggat | 120 |
| ctctgcttgg | aactcagagg | cgctgaccca | gcctggggcc | cgtttgcgtc | ccacggggagg | 180 |
| agccgcgcgtc | agggctcgag | atttctgtgg | ctcctcaaga | tattggtcat | aatcctggta | 240 |
| cttggcattg | ttggatttat | gttcggaaagc | atttccttc | aaggcgtgtt | cagcagcccc | 300 |
| aagccagaac | tcccaagtcc | tgccccgggt | gtccagaagc | tgaagcttct | gcctgaggaa | 360 |
| cgtctcagga | accttttcc | ctacgatgga | atctgtcctc | ttgcttgc | caggctgttc | 420 |
| ccgaaaaatc | agtgc当地at | tgaagccaa | aaagagcagg | gaggttacaa | cttcaggat | 480 |
| gcctatggcc | agagcgacct | cccagcggtg | aaagcgagga | gacaggctga | atttgaacac | 540 |
| tttcagagga | ggtaa | | | | | 555 |

<210> 8

<211> 184

<212> PRT

<213> Homo sapiens

<400> 8

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Gly | Ser | Ala | Gly | Phe | Ser | Val | Gly | Lys | Phe | His | Val | Glu | Val | Ala |
| 1 | | | | | 5 | | | | 10 | | | | 15 | | |
| Ser | Arg | Gly | Arg | Glu | Cys | Val | Ser | Gly | Thr | Pro | Glu | Cys | Gly | Asn | Arg |
| | | | | | | 20 | | | 25 | | | 30 | | | |
| Leu | Gly | Ser | Ala | Gly | Phe | Gly | Asp | Leu | Cys | Leu | Glu | Leu | Arg | Gly | Ala |
| | | | | | | | 35 | | 40 | | 45 | | | | |
| Asp | Pro | Ala | Trp | Gly | Pro | Phe | Ala | Ala | His | Gly | Arg | Ser | Arg | Arg | Gln |

| 50 | 55 | 60 |
|---|-----|-----|
| Gly Ser Arg Phe Leu Trp Leu Leu Lys Ile Leu Val Ile Ile Leu Val | | |
| 65 | 70 | 75 |
| Leu Gly Ile Val Gly Phe Met Phe Gly Ser Met Phe Leu Gln Ala Val | | 80 |
| 85 | 90 | 95 |
| Phe Ser Ser Pro Lys Pro Glu Leu Pro Ser Pro Ala Pro Gly Val Gln | | |
| 100 | 105 | 110 |
| Lys Leu Lys Leu Leu Pro Glu Glu Arg Leu Arg Asn Leu Phe Ser Tyr | | |
| 115 | 120 | 125 |
| Asp Gly Ile Cys Pro Leu Ala Cys Phe Arg Leu Phe Pro Lys Asn Gln | | |
| 130 | 135 | 140 |
| Cys Lys Cys Glu Ala Asn Lys Glu Gln Gly Gly Tyr Asn Phe Gln Asp | | |
| 145 | 150 | 155 |
| Ala Tyr Gly Gln Ser Asp Leu Pro Ala Val Lys Ala Arg Arg Gln Ala | | 160 |
| 165 | 170 | 175 |
| Glu Phe Glu His Phe Gln Arg Arg | | |
| 180 | | |

<210> 9
 <211> 372
 <212> DNA
 <213> Homo sapiens

| | | | | |
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| <400> 9 | | | | |
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| cttggcatgtt ttggattttat gttcgaaagc atgttccttc aagcagtgtt cagcagcccc | | | | 120 |
| aagccagaac tcccaagtcc tgccccgggt gtccagaagc tgaagcttct gcctgaggaa | | | | 180 |
| cgtctcagga acctcttttc ctacgatgga atctgtcctc ttgcttgttt caggctgttc | | | | 240 |
| ccgaaaaatc agtgaaatg tgaagccaaac aaagagcagg gaggttacaa ctttcaggat | | | | 300 |
| gcctatggcc agagcgacct cccagcgtg aaagcgagga gacaggctga atttgaacac | | | | 360 |
| tttcagagga gg | | | | 372 |

<210> 10
 <211> 124
 <212> PRT
 <213> Homo sapiens

| | | | | |
|---|-----|-----|----|--|
| <400> 10 | | | | |
| Met Thr Ser Gly Gly Ser Arg Phe Leu Trp Leu Leu Lys Ile Leu Val | | | | |
| 1 | 5 | 10 | 15 | |
| Ile Ile Leu Val Leu Gly Ile Val Gly Phe Met Phe Gly Ser Met Phe | | | | |
| 20 | 25 | 30 | | |
| Leu Gln Ala Val Phe Ser Ser Pro Lys Pro Glu Leu Pro Ser Pro Ala | | | | |
| 35 | 40 | 45 | | |
| Pro Gly Val Gln Lys Leu Lys Leu Leu Pro Glu Glu Arg Leu Arg Asn | | | | |
| 50 | 55 | 60 | | |
| Leu Phe Ser Tyr Asp Gly Ile Cys Pro Leu Ala Cys Phe Arg Leu Phe | | | | |
| 65 | 70 | 75 | 80 | |
| Pro Lys Asn Gln Cys Lys Cys Glu Ala Asn Lys Glu Gln Gly Gly Tyr | | | | |
| 85 | 90 | 95 | | |
| Asn Phe Gln Asp Ala Tyr Gly Gln Ser Asp Leu Pro Ala Val Lys Ala | | | | |
| 100 | 105 | 110 | | |
| Arg Arg Gln Ala Glu Phe Glu His Phe Gln Arg Arg | | | | |
| 115 | 120 | | | |

<210> 11

<211> 537
 <212> DNA
 <213> Homo sapiens

<400> 11
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 ctctgcttgg aactcagagg cgctgacca gcctggggcc cgtttgcgtc ccacgggagg 180
 agccgcgcgc agggctcgag atttctgtgg ctccctcaaga tattggtcat aatcctggta 240
 cttggcatcg ttggatttat gttcggaaagc atttccttc aagcagtgtt cagcagcccc 300
 aagccagaac tcccaagtcc tgccccgggt gtccagaagc tgaagttct gcctgaggaa 360
 cgtctcagga acctctttc ctacgatgga atctggctgt tcccgaaaaa tcagtgc当地 420
 tgtgaagcca acaaagagca gggaggtac aacttcagg atgcctatgg ccagagcgac 480
 ctcccagcgg tgaaagcgag gagacagcgt gaatttgaac actttcagag gaggtaa 537

<210> 12
 <211> 182
 <212> PRT
 <213> Homo sapiens

<400> 12
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 Val Glu Val Ala Ser Arg Gly Arg Glu Cys Val Ser Gly Thr Pro Glu
 20 25 30
 Cys Gly Asn Arg Leu Gly Ser Ala Gly Phe Gly Asp Leu Cys Leu Glu
 35 40 45
 Leu Arg Gly Ala Asp Pro Ala Trp Gly Pro Phe Ala Ala His Gly Arg
 50 55 60
 Ser Arg Arg Gln Gly Ser Arg Phe Leu Trp Leu Leu Lys Ile Leu Val
 65 70 75 80
 Ile Ile Leu Val Leu Gly Ile Val Gly Phe Met Phe Gly Ser Met Phe
 85 90 95
 Leu Gln Ala Val Phe Ser Ser Pro Lys Pro Glu Leu Pro Ser Pro Ala
 100 105 110
 Pro Gly Val Gln Lys Leu Lys Leu Leu Pro Glu Glu Arg Leu Arg Asn
 115 120 125
 Leu Phe Ser Tyr Asp Gly Ile Trp Leu Phe Pro Lys Asn Gln Cys Lys
 130 135 140
 Cys Glu Ala Asn Lys Glu Gln Gly Gly Tyr Asn Phe Gln Asp Ala Tyr
 145 150 155 160
 Gly Gln Ser Asp Leu Pro Ala Val Lys Ala Arg Arg Gln Ala Glu Phe
 165 170 175
 Glu His Phe Gln Arg Arg
 180

<210> 13
 <211> 357
 <212> DNA
 <213> Homo sapiens

<400> 13
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 cttggcatcg ttggatttat gttcggaaagc atttccttc aagcagtgtt cagcagcccc 120
 aagccagaac tcccaagtcc tgccccgggt gtccagaagc tgaagttct gcctgaggaa 180
 cgtctcagga acctctttc ctacgatgga atctggctgt tcccgaaaaa tcagtgc当地 240

tgtgaagcca acaaagagca gggaggtac aacttcagg atgcctatgg ccagagcgac 300
ctcccagcg tgaaagcgag gagacagggct gaatttgaac actttcagag gaggtaa 357

<210> 14
<211> 118
<212> PRT
<213> Homo sapiens

<400> 14
Met Thr Ser Gly Gly Ser Arg Phe Leu Trp Leu Leu Lys Ile Leu Val
1 5 10 15
Ile Ile Leu Val Leu Gly Ile Val Gly Phe Met Phe Gly Ser Met Phe
20 25 30
Leu Gln Ala Val Phe Ser Ser Pro Lys Pro Glu Leu Pro Ser Pro Ala
35 40 45
Pro Gly Val Gln Lys Leu Lys Leu Leu Pro Glu Glu Arg Leu Arg Asn
50 55 60
Leu Phe Ser Tyr Asp Gly Ile Trp Leu Phe Pro Lys Asn Gln Cys Lys
65 70 75 80
Cys Glu Ala Asn Lys Glu Gln Gly Gly Tyr Asn Phe Gln Asp Ala Tyr
85 90 95
Gly Gln Ser Asp Leu Pro Ala Val Lys Ala Arg Arg Gln Ala Glu Phe
100 105 110
Glu His Phe Gln Arg Arg
115

<210> 15
<211> 1361
<212> DNA
<213> Homo sapiens

<400> 15
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aatgtgtct cggggacgcc cgagtgtgg aatcggtcg ggagtgcggg cttcgggat 120
ctctgcttgg aactcagagg cgctgaccca gcctggggcc cgtttgcgc ccacgggagg 180
agccgcccgtc agggctcgag atttctgtgg ctcctcaaga tattggtcat aatcctggta 240
cttggcattt ttggatttat gttcggaaagc atgttccttc aagcagtgtt cagcagcccc 300
aagccagaac tcccaagtcc tgccccgggt gtccagaagc tgaagcttgc gcctgaggaa 360
cgtctcagga acctctttc ctacgatgga atctgtcctc ttgcttggtt caggctgttc 420
ccgaaaaatc agtgc当地t tgaagccaaac aaagagcagg gaggttacaa ctttcaggat 480
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tttgggtacc cagtc当地cgg agtggagggt atgccccctgc acacgggtcc catcccaggc 660
ctccagttt aaggacccga tgccccggc tatgaggtca ccctgacagc ttctctgggg 720
acactgaaca cccttgctga tggccagac agtgtgtgc agggcagagg ccagaagcag 780
ctgatcattt ctaccagtga ccggaaagctg ttgaagttca ttcttcagca cgtgacatac 840
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gtggccaagt ttccagtgac catccgccccat cctgtcatac ccaagctata cgaccctgg 960
ccagagagga agctcagaaa cctgggttacc attgttacca agactttcct ccggcccccac 1020
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gctgatgaca gccagaagcc cctggaaatt aaagacaacc acgtggagta ttacactatg 1140
cccttggga aggggtgggtt tgctggtagg aacctggcca tatctcaggt caccaccaaa 1200
tacgttctct gggtggacga tgattttcct ttcaacgagg agaccaagat tgaggtgctg 1260
gtggatgtcc tggagaaaac agaactggac gtggtaaggg acagttgcca gtttcaccca 1320
gccacaatct gtagagatgg agaagagggg agaagagagc g 1361

<210> 16
<211> 453
<212> PRT
<213> Homo sapiens

<400> 16
Met Gly Ser Ala Gly Phe Ser Val Gly Lys Phe His Val Glu Val Ala
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Ser Arg Gly Arg Glu Cys Val Ser Gly Thr Pro Glu Cys Gly Asn Arg
20 25 30
Leu Gly Ser Ala Gly Phe Gly Asp Leu Cys Leu Glu Leu Arg Gly Ala
35 40 45
Asp Pro Ala Trp Gly Pro Phe Ala Ala His Gly Arg Ser Arg Arg Gln
50 55 60
Gly Ser Arg Phe Leu Trp Leu Leu Lys Ile Leu Val Ile Ile Leu Val
65 70 75 80
Leu Gly Ile Val Gly Phe Met Phe Gly Ser Met Phe Leu Gln Ala Val
85 90 95
Phe Ser Ser Pro Lys Pro Glu Leu Pro Ser Pro Ala Pro Gly Val Gln
100 105 110
Lys Leu Lys Leu Leu Pro Glu Glu Arg Leu Arg Asn Leu Phe Ser Tyr
115 120 125
Asp Gly Ile Cys Pro Leu Ala Cys Phe Arg Leu Phe Pro Lys Asn Gln
130 135 140
Cys Lys Cys Glu Ala Asn Lys Glu Gln Gly Tyr Asn Phe Gln Asp
145 150 155 160
Ala Tyr Gly Gln Ser Asp Leu Pro Ala Val Lys Ala Arg Arg Gln Ala
165 170 175
Glu Phe Glu His Phe Gln Arg Arg Glu Gly Leu Pro Arg Pro Leu Pro
180 185 190
Leu Leu Val Gln Pro Asn Leu Pro Phe Gly Tyr Pro Val His Gly Val
195 200 205
Glu Val Met Pro Leu His Thr Val Pro Ile Pro Gly Leu Gln Phe Glu
210 215 220
Gly Pro Asp Ala Pro Val Tyr Glu Val Thr Leu Thr Ala Ser Leu Gly
225 230 235 240
Thr Leu Asn Thr Leu Ala Asp Val Pro Asp Ser Val Val Gln Gly Arg
245 250 255
Gly Gln Lys Gln Leu Ile Ile Ser Thr Ser Asp Arg Lys Leu Leu Lys
260 265 270
Phe Ile Leu Gln His Val Thr Tyr Thr Ser Thr Gly Tyr Gln His Gln
275 280 285
Lys Val Asp Ile Val Ser Leu Glu Ser Arg Ser Ser Val Ala Lys Phe
290 295 300
Pro Val Thr Ile Arg His Pro Val Ile Pro Lys Leu Tyr Asp Pro Gly
305 310 315 320
Pro Glu Arg Lys Leu Arg Asn Leu Val Thr Ile Ala Thr Lys Thr Phe
325 330 335
Leu Arg Pro His Lys Leu Met Ile Met Leu Arg Ser Ile Arg Glu Tyr
340 345 350
Tyr Pro Asp Leu Thr Val Ile Val Ala Asp Asp Ser Gln Lys Pro Leu
355 360 365
Glu Ile Lys Asp Asn His Val Glu Tyr Tyr Thr Met Pro Phe Gly Lys
370 375 380
Gly Trp Phe Ala Gly Arg Asn Leu Ala Ile Ser Gln Val Thr Thr Lys
385 390 395 400

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Tyr | Val | Leu | Trp | Val | Asp | Asp | Asp | Phe | Leu | Phe | Asn | Glu | Glu | Thr | Lys |
| | | | | 405 | | | | | 410 | | | | | 415 | |
| Ile | Glu | Val | Leu | Val | Asp | Val | Leu | Glu | Lys | Thr | Glu | Leu | Asp | Val | Val |
| | | | | 420 | | | | 425 | | | 430 | | | | |
| Arg | Asp | Ser | Cys | Gln | Phe | His | Pro | Ala | Thr | Ile | Cys | Arg | Asp | Gly | Glu |
| | | | | 435 | | | | 440 | | | 445 | | | | |
| Glu | Gly | Arg | Arg | Glu | | | | | | | | | | | |
| | | | | 450 | | | | | | | | | | | |

<210> 17

<211> 1181

<212> DNA

<213> Homo sapiens

<400> 17

| | | | | | | |
|------------|-------------|-------------|------------|-------------|-------------|------|
| atgacttcgg | gcggctcgag | atttctgtgg | ctcctcaaga | tattggtcata | aatcctggta | 60 |
| cttggcattt | ttggattttat | gttcggaaagc | atgttccttc | aaggcgtgtt | cagcagcccc | 120 |
| aagccagaac | tcccaagtcc | tgccccgggt | gtccagaagc | tgaagcttct | gcctgaggaa | 180 |
| cgtctcagg | acctcttttc | ctacgatgga | atctgtcctc | ttgcttgc | caggctgttc | 240 |
| ccgaaaaatc | agtgc当地atg | tgaagccaaac | aaagagcagg | gaggttacaa | ctttcaggat | 300 |
| gcctatggcc | agagcgtac | cccagcgggt | aaagcgagga | gacaggctga | atttgaacac | 360 |
| tttcagagga | gagaaggcgt | gccccgcccc | ctgcccctgc | ttgtccagcc | caacccccc | 420 |
| tttgggtacc | cagtccacgg | agtggaggtt | atgcccctgc | acacggttcc | catcccaggc | 480 |
| ctccagttt | agggacccga | tgcccccgtc | tatgaggtca | ccctgacagc | ttctctgggg | 540 |
| acactgaaca | cccttgctga | tgtcccagac | agtgtgtc | agggcagagg | ccagaaggcag | 600 |
| ctgatcattt | ctaccagtga | ccggaagctg | ttgaagttca | ttcttcagca | cgtgacatac | 660 |
| accagcacgg | ggtaccagca | ccagaaggta | gacatagtga | gtctggagtc | caggtcctca | 720 |
| gtggccaagt | ttccagtgac | catccgccat | cctgtcatac | ccaagctata | cgaccctgg | 780 |
| ccagagagga | agctcagaaa | cctggttacc | attgtctacc | agactttct | ccgccccccac | 840 |
| aagctcatga | tcatgctccg | gagtattcga | gagtattacc | cagacttgac | cgtaatagtg | 900 |
| gctgatgaca | gccagaagcc | cctggaaatt | aaagacaacc | acgtggagta | ttacactatg | 960 |
| ccctttggg | agggttgggtt | tgctggtagg | aacctggcca | tatctcaggt | caccacaaa | 1020 |
| ta | ct | gg | tt | cc | ac | 1080 |
| gtggatgtcc | ttggagaaaac | agaactggac | gtggtaaggg | acagttgcca | gtttcaccca | 1140 |
| gccacaatct | gtagagatgg | agaagagggg | agaagagac | g | | 1181 |

<210> 18

<211> 393

<212> PRT

<213> Homo sapiens

<400> 18

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Thr | Ser | Gly | Gly | Ser | Arg | Phe | Leu | Trp | Leu | Leu | Lys | Ile | Leu | Val |
| 1 | | | | | 5 | | | 10 | | | | 15 | | | |
| Ile | Ile | Leu | Val | Leu | Gly | Ile | Val | Gly | Phe | Met | Phe | Gly | Ser | Met | Phe |
| | | | | | | | 20 | | 25 | | 30 | | | | |
| Leu | Gln | Ala | Val | Phe | Ser | Ser | Pro | Lys | Pro | Glu | Leu | Pro | Ser | Pro | Ala |
| | | | | | | | 35 | | 40 | | 45 | | | | |
| Pro | Gly | Val | Gln | Lys | Leu | Lys | Leu | Leu | Pro | Glu | Glu | Arg | Leu | Arg | Asn |
| | | | | | | | 50 | | 55 | | 60 | | | | |
| Leu | Phe | Ser | Tyr | Asp | Gly | Ile | Cys | Pro | Leu | Ala | Cys | Phe | Arg | Leu | Phe |
| | | | | | | | 65 | | 70 | | 75 | | 80 | | |
| Pro | Lys | Asn | Gln | Cys | Lys | Cys | Glu | Ala | Asn | Lys | Glu | Gln | Gly | Gly | Tyr |
| | | | | | | | 85 | | 90 | | 95 | | | | |
| Asn | Phe | Gln | Asp | Ala | Tyr | Gly | Gln | Ser | Asp | Leu | Pro | Ala | Val | Lys | Ala |
| | | | | | | | 100 | | 105 | | 110 | | | | |

Arg Arg Gln Ala Glu Phe Glu His Phe Gln Arg Arg Glu Gly Leu Pro
 115 120 125
 Arg Pro Leu Pro Leu Leu Val Gln Pro Asn Leu Pro Phe Gly Tyr Pro
 130 135 140
 Val His Gly Val Glu Val Met Pro Leu His Thr Val Pro Ile Pro Gly
 145 150 155 160
 Leu Gln Phe Glu Gly Pro Asp Ala Pro Val Tyr Glu Val Thr Leu Thr
 165 170 175
 Ala Ser Leu Gly Thr Leu Asn Thr Leu Ala Asp Val Pro Asp Ser Val
 180 185 190
 Val Gln Gly Arg Gly Gln Lys Gln Leu Ile Ile Ser Thr Ser Asp Arg
 195 200 205
 Lys Leu Leu Lys Phe Ile Leu Gln His Val Thr Tyr Thr Ser Thr Gly
 210 215 220
 Tyr Gln His Gln Lys Val Asp Ile Val Ser Leu Glu Ser Arg Ser Ser
 225 230 235 240
 Val Ala Lys Phe Pro Val Thr Ile Arg His Pro Val Ile Pro Lys Leu
 245 250 255
 Tyr Asp Pro Gly Pro Glu Arg Lys Leu Arg Asn Leu Val Thr Ile Ala
 260 265 270
 Thr Lys Thr Phe Leu Arg Pro His Lys Leu Met Ile Met Leu Arg Ser
 275 280 285
 Ile Arg Glu Tyr Tyr Pro Asp Leu Thr Val Ile Val Ala Asp Asp Ser
 290 295 300
 Gln Lys Pro Leu Glu Ile Lys Asp Asn His Val Glu Tyr Tyr Thr Met
 305 310 315 320
 Pro Phe Gly Lys Gly Trp Phe Ala Gly Arg Asn Leu Ala Ile Ser Gln
 325 330 335
 Val Thr Thr Lys Tyr Val Leu Trp Val Asp Asp Asp Phe Leu Phe Asn
 340 345 350
 Glu Glu Thr Lys Ile Glu Val Leu Val Asp Val Leu Glu Lys Thr Glu
 355 360 365
 Leu Asp Val Val Arg Asp Ser Cys Gln Phe His Pro Ala Thr Ile Cys
 370 375 380
 Arg Asp Gly Glu Glu Gly Arg Arg Glu
 385 390

<210> 19
 <211> 1344
 <212> DNA
 <213> Homo sapiens

<400> 19
 atggggagcg ctggctttc cgtggaaaaa ttccacgtgg aggtggcctc tcgcggccgg 60
 gaatgtgtct cggggacgcc cgagtgtgg aatcggtcg ggagtgcggg cttcgggat 120
 ctctgcttgg aactcagagg cgctgaccca gcctggggcc cgtttgcgtc ccaacggagg 180
 agccgcccgtc agggctcgag atttctgtgg ctcctcaaga tattggtcat aatcctggta 240
 cttggcattt ttggatttat gttcggaaagc atttcccttc aagcagtggtt cagcagcccc 300
 aagccagaac tcccaagtcc tgccccgggt gtccagaagc tgaagcttgc gcctgaggaa 360
 cgtctcagga acctctttc ctacgatgga atctggctgt tcccgaaaaa tcagtgc当地 420
 tgtgaagcca acaaagagca gggaggttac aactttcagg atgcctatgg ccagagcgac 480
 ctccccaggg tgaaagcgag gagacaggtt gaatttgaac actttcagag gagagaaggg 540
 ctgccccggcc cactgccccct gctggtccag cccaaacctcc cctttgggta cccagtc当地 600
 ggagtggagg tgatgccccct gcacacggtt cccatcccag gcctccagtt tgaaggaccc 660
 gatgccccccg tctatgaggt caccctgaca gcttctctgg ggacactgaa cacccttgct 720
 gatgtccccag acagtgtggc gcagggcaga ggccagaagc agctgatcat ttctaccagt 780

| | | | | | | |
|------------|------------|-------------|-------------|------------|-------------|------|
| gaccggaagc | tgttgaagtt | cattcttcag | cacgtgacat | acaccagcac | ggggtaaccag | 840 |
| caccagaagg | tagacatagt | gagtctggag | tccaggtcct | cagtggccaa | gttccagtg | 900 |
| accatccccc | atcctgtcat | acccaagcta | tacgaccctg | gaccagagag | gaagctcaga | 960 |
| aacctggta | ccattgctac | caagacttc | ctccgcccccc | acaagctcat | gatcatgctc | 1020 |
| cggagtattc | gagagtatta | cccagacttgc | accgtaatag | tggctgatga | cagccagaag | 1080 |
| cccctggaaa | ttaaagacaa | ccacgtggag | tattacacta | tgcctttgg | gaagggttgg | 1140 |
| tttgctggta | ggaacctggc | catatctcg | gtcaccacca | aatacgttct | ctgggtggac | 1200 |
| gatgatttc | tcttcaacga | ggagaccaag | attgaggtgc | tggtgatgt | cctggagaaa | 1260 |
| acagaactgg | acgtggtaag | ggacagttgc | cagttcacc | cagccacaat | ctgttagagat | 1320 |
| ggagaagagg | ggagaagaga | gcga | | | | 1344 |

<210> 20

<211> 448

<212> PRT

<213> Homo sapiens

<400> 20

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Gly | Ser | Ala | Gly | Phe | Ser | Val | Gly | Phe | His | Val | Glu | Val | Ala | | | |
| 1 | | | | | | | | | | | | | | 15 | | | |
| Ser | Arg | Gly | Arg | Glu | Cys | Val | Ser | Gly | Thr | Pro | Glu | Cys | Gly | Asn | Arg | | |
| | | | | | | | | | | | | | | 20 | 25 | 30 | |
| Leu | Gly | Ser | Ala | Gly | Phe | Gly | Asp | Leu | Cys | Leu | Glu | Leu | Arg | Gly | Ala | | |
| | | | | | | | | | | | | | | 35 | 40 | 45 | |
| Asp | Pro | Ala | Trp | Gly | Pro | Phe | Ala | Ala | His | Gly | Arg | Ser | Arg | Arg | Gln | | |
| | | | | | | | | | | | | | | 50 | 55 | 60 | |
| Gly | Ser | Arg | Phe | Leu | Trp | Leu | Leu | Lys | Ile | Leu | Val | Ile | Ile | Leu | Val | | |
| | | | | | | | | | | | | | | 65 | 70 | 75 | 80 |
| Leu | Gly | Ile | Val | Gly | Phe | Met | Phe | Gly | Ser | Met | Phe | Leu | Gln | Ala | Val | | |
| | | | | | | | | | | | | | | 85 | 90 | 95 | |
| Phe | Ser | Ser | Pro | Lys | Pro | Glu | Leu | Pro | Ser | Pro | Ala | Pro | Gly | Val | Gln | | |
| | | | | | | | | | | | | | | 100 | 105 | 110 | |
| Lys | Leu | Lys | Leu | Leu | Pro | Glu | Glu | Arg | Leu | Arg | Asn | Leu | Phe | Ser | Tyr | | |
| | | | | | | | | | | | | | | 115 | 120 | 125 | |
| Asp | Gly | Ile | Trp | Leu | Phe | Pro | Lys | Asn | Gln | Cys | Lys | Cys | Glu | Ala | Asn | | |
| | | | | | | | | | | | | | | 130 | 135 | 140 | |
| Lys | Glu | Gln | Gly | Gly | Tyr | Asn | Phe | Gln | Asp | Ala | Tyr | Gly | Gln | Ser | Asp | | |
| | | | | | | | | | | | | | | 145 | 150 | 155 | 160 |
| Leu | Pro | Ala | Val | Lys | Ala | Arg | Arg | Gln | Ala | Glu | Phe | Glu | His | Phe | Gln | | |
| | | | | | | | | | | | | | | 165 | 170 | 175 | |
| Arg | Arg | Glu | Gly | Leu | Pro | Arg | Pro | Leu | Pro | Leu | Leu | Val | Gln | Pro | Asn | | |
| | | | | | | | | | | | | | | 180 | 185 | 190 | |
| Leu | Pro | Phe | Gly | Tyr | Pro | Val | His | Gly | Val | Glu | Val | Met | Pro | Leu | His | | |
| | | | | | | | | | | | | | | 195 | 200 | 205 | |
| Thr | Val | Pro | Ile | Pro | Gly | Leu | Gln | Phe | Glu | Gly | Pro | Asp | Ala | Pro | Val | | |
| | | | | | | | | | | | | | | 210 | 215 | 220 | |
| Tyr | Glu | Val | Thr | Leu | Thr | Ala | Ser | Leu | Gly | Thr | Leu | Asn | Thr | Leu | Ala | | |
| | | | | | | | | | | | | | | 225 | 230 | 235 | 240 |
| Asp | Val | Pro | Asp | Ser | Val | Val | Gln | Gly | Arg | Gly | Gly | Gln | Lys | Gln | Ile | | |
| | | | | | | | | | | | | | | 245 | 250 | 255 | |
| Ile | Ser | Thr | Ser | Asp | Arg | Lys | Leu | Leu | Lys | Phe | Ile | Leu | Gln | His | Val | | |
| | | | | | | | | | | | | | | 260 | 265 | 270 | |
| Thr | Tyr | Thr | Ser | Thr | Gly | Tyr | Gln | His | Gln | Lys | Val | Asp | Ile | Val | Ser | | |
| | | | | | | | | | | | | | | 275 | 280 | 285 | |
| Leu | Glu | Ser | Arg | Ser | Ser | Val | Ala | Lys | Phe | Pro | Val | Thr | Ile | Arg | His | | |
| | | | | | | | | | | | | | | 290 | 295 | 300 | |
| Pro | Val | Ile | Pro | Lys | Leu | Tyr | Asp | Pro | Gly | Pro | Glu | Arg | Lys | Leu | Arg | | |

| | | | |
|---|-----|-----|-----|
| 305 | 310 | 315 | 320 |
| Asn Leu Val Thr Ile Ala Thr Lys Thr Phe Leu Arg Pro His Lys Leu | | | |
| 325 | 330 | 335 | |
| Met Ile Met Leu Arg Ser Ile Arg Glu Tyr Tyr Pro Asp Leu Thr Val | | | |
| 340 | 345 | 350 | |
| Ile Val Ala Asp Asp Ser Gln Lys Pro Leu Glu Ile Lys Asp Asn His | | | |
| 355 | 360 | 365 | |
| Val Glu Tyr Tyr Thr Met Pro Phe Gly Lys Gly Trp Phe Ala Gly Arg | | | |
| 370 | 375 | 380 | |
| Asn Leu Ala Ile Ser Gln Val Thr Thr Lys Tyr Val Leu Trp Val Asp | | | |
| 385 | 390 | 395 | 400 |
| Asp Asp Phe Leu Phe Asn Glu Glu Thr Lys Ile Glu Val Leu Val Asp | | | |
| 405 | 410 | 415 | |
| Val Leu Glu Lys Thr Glu Leu Asp Val Val Arg Asp Ser Cys Gln Phe | | | |
| 420 | 425 | 430 | |
| His Pro Ala Thr Ile Cys Arg Asp Gly Glu Gly Arg Arg Glu Arg | | | |
| 435 | 440 | 445 | |

<210> 21
 <211> 1164
 <212> DNA
 <213> Homo sapiens

<400> 21

| | | | |
|-----------------------|--------------------------------|--|------|
| atgacttcgg gcggctcgag | atttctgtgg ctcctcaaga | tattggtcat aatcctggta | 60 |
| cttggcattt | ttggatttat gttcggaaac | atgttccttc aagcagtgtt | 120 |
| aagccagaac | tcccaagtcc tgccccgggt | gtccagaagc tgaagcttct | 180 |
| cgtctcagga | acctctttc ctacgatgga | atctggctgt tcccgaaaaa | 240 |
| tgtgaagcca | acaaagagca gggaggttac | tcagtgc当地 aactttcagg atgcctatgg | 300 |
| c当地 cagcgg | tgaaaagcgg gagacaggct | ccagagc当地 acatttcagag gagagaaggg | 360 |
| ctgccccgccc | cactgcccct gctggtccag | c当地 cccacttcc ccttggta cccagtc当地 | 420 |
| ggagtggagg | tgatccccct gcacacgggt | gc当地 cccatcccag gc当地 cc当地 agtgc当地 tt当地 acccgttgc | 480 |
| gatgcccccg | tctatgaggt caccctgaca | ggacactgaa cacccttgc当地 | 540 |
| gatgtcccag | acagtgtgggt | gatgtatcat tt当地 acccgttgc当地 | 600 |
| gaccggaaagc | gc当地 cggc当地 gagatgtt cattcttca | gacccggc当地 ggggtaccag | 660 |
| c当地 cccatccat | acccatccat tacgaccctg | c当地 cccatccat caccaggcac | 720 |
| aacctgggta | ccattgctac caagacttcc | gggttcc当地 cccatccat gatcatgctc | 780 |
| c当地 cccatccat | ctccggccccc acaagctcat | gatcatgctc | 840 |
| ccggatattc | gagatgtt cccagacttg | ttggctgatga cagccagaag | 900 |
| ccccc当地 ggaaa | ttaaagacaa ccacgtggag | ccccc当地 ggaaa tattacacta tgccctt当地 gg当地 gaagggtt当地 | 960 |
| tttgctggta | ggaacctggc | tttgctggta ggaacctggc | 1020 |
| gatgatttc | catactctag gtcaccacca | catactctag gtcaccacca aatacgttct | 1080 |
| acagaactgg | ggagacccaag attgaggtgc | ctgggtggac | 1140 |
| ggagaagagg | acgtggtaag ggacagttgc | ttggatgtt cagtttacc | 1164 |

<210> 22
 <211> 388
 <212> PRT
 <213> Homo sapiens

<400> 22

| | | | |
|---|----|----|----|
| Met Thr Ser Gly Gly Ser Arg Phe Leu Trp Leu Leu Lys Ile Leu Val | | | |
| 1 | 5 | 10 | 15 |
| Ile Ile Leu Val Leu Gly Ile Val Gly Phe Met Phe Gly Ser Met Phe | | | |
| 20 | 25 | 30 | |
| Leu Gln Ala Val Phe Ser Ser Pro Lys Pro Glu Leu Pro Ser Pro Ala | | | |

| 35 | 40 | 45 | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Pro | Gly | Val | Gln | Lys | Leu | Lys | Leu | Leu | Pro | Glu | Glu | Arg | Leu | Arg | Asn |
| 50 | | | | 55 | | | | | 60 | | | | | | |
| Leu | Phe | Ser | Tyr | Asp | Gly | Ile | Trp | Leu | Phe | Pro | Lys | Asn | Gln | Cys | Lys |
| 65 | | | | | 70 | | | | 75 | | | | | | 80 |
| Cys | Glu | Ala | Asn | Lys | Glu | Gln | Gly | Gly | Tyr | Asn | Phe | Gln | Asp | Ala | Tyr |
| | | | | | 85 | | | | 90 | | | | | | 95 |
| Gly | Gln | Ser | Asp | Leu | Pro | Ala | Val | Lys | Ala | Arg | Arg | Gln | Ala | Glu | Phe |
| | | | | | 100 | | | | 105 | | | | | | 110 |
| Glu | His | Phe | Gln | Arg | Arg | Glu | Gly | Leu | Pro | Arg | Pro | Leu | Pro | Leu | Leu |
| | | | | | 115 | | | | 120 | | | | | | 125 |
| Val | Gln | Pro | Asn | Leu | Pro | Phe | Gly | Tyr | Pro | Val | His | Gly | Val | Glu | Val |
| | | | | | 130 | | | | 135 | | | | | | 140 |
| Met | Pro | Leu | His | Thr | Val | Pro | Ile | Pro | Gly | Leu | Gln | Phe | Glu | Gly | Pro |
| 145 | | | | | | 150 | | | | 155 | | | | | 160 |
| Asp | Ala | Pro | Val | Tyr | Glu | Val | Thr | Leu | Thr | Ala | Ser | Leu | Gly | Thr | Leu |
| | | | | | | 165 | | | | 170 | | | | | 175 |
| Asn | Thr | Leu | Ala | Asp | Val | Pro | Asp | Ser | Val | Val | Gln | Gly | Arg | Gly | Gln |
| | | | | | | 180 | | | | 185 | | | | | 190 |
| Lys | Gln | Leu | Ile | Ile | Ser | Thr | Ser | Asp | Arg | Lys | Leu | Leu | Lys | Phe | Ile |
| | | | | | | 195 | | | | 200 | | | | | 205 |
| Leu | Gln | His | Val | Thr | Tyr | Thr | Ser | Thr | Gly | Tyr | Gln | His | Gln | Lys | Val |
| | | | | | | 210 | | | | 215 | | | | | 220 |
| Asp | Ile | Val | Ser | Leu | Glu | Ser | Arg | Ser | Ser | Val | Ala | Lys | Phe | Pro | Val |
| 225 | | | | | | 230 | | | | 235 | | | | | 240 |
| Thr | Ile | Arg | His | Pro | Val | Ile | Pro | Lys | Leu | Tyr | Asp | Pro | Gly | Pro | Glu |
| | | | | | | 245 | | | | 250 | | | | | 255 |
| Arg | Lys | Leu | Arg | Asn | Leu | Val | Thr | Ile | Ala | Thr | Lys | Thr | Phe | Leu | Arg |
| | | | | | | 260 | | | | 265 | | | | | 270 |
| Pro | His | Lys | Leu | Met | Ile | Met | Leu | Arg | Ser | Ile | Arg | Glu | Tyr | Tyr | Pro |
| | | | | | | 275 | | | | 280 | | | | | 285 |
| Asp | Leu | Thr | Val | Ile | Val | Ala | Asp | Asp | Ser | Gln | Lys | Pro | Leu | Glu | Ile |
| | | | | | | 290 | | | | 295 | | | | | 300 |
| Lys | Asp | Asn | His | Val | Glu | Tyr | Tyr | Thr | Met | Pro | Phe | Gly | Lys | Gly | Trp |
| 305 | | | | | | 310 | | | | 315 | | | | | 320 |
| Phe | Ala | Gly | Arg | Asn | Leu | Ala | Ile | Ser | Gln | Val | Thr | Thr | Lys | Tyr | Val |
| | | | | | | 325 | | | | 330 | | | | | 335 |
| Leu | Trp | Val | Asp | Asp | Asp | Phe | Leu | Phe | Asn | Glu | Glu | Thr | Lys | Ile | Glu |
| | | | | | | 340 | | | | 345 | | | | | 350 |
| Val | Leu | Val | Asp | Val | Leu | Glu | Lys | Thr | Glu | Leu | Asp | Val | Val | Arg | Asp |
| | | | | | | 355 | | | | 360 | | | | | 365 |
| Ser | Cys | Gln | Phe | His | Pro | Ala | Thr | Ile | Cys | Arg | Asp | Gly | Glu | Glu | Gly |
| | | | | | | 370 | | | | 375 | | | | | 380 |
| Arg | Arg | Glu | Arg | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |
| 385 | | | | | | | | | | | | | | | |

<210> 23

<211> 549

<212> DNA

<213> Homo sapiens

<400> 23

| | | | | | | |
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| atggggagcg | ctggcttttc | cgtggaaaaa | ttccacgtgg | agggtggcctc | tcgcggccgg | 60 |
| gaatgtgtct | cggggacgccc | cgagtgtggg | aatcggctcg | ggagtgccgg | cttcggggat | 120 |
| ctctgcttgg | aactcagagg | cgctgaccca | gcctggggcc | cgtttgctgc | ccacgggagg | 180 |
| agccgcccgtc | agggctcgag | atttctgtgg | ctcctcaaga | tattggtcat | aatcctggta | 240 |

| | |
|--|-----|
| cttggcatg ttggatttat gttcggaaagc atttcccttc aaggcgtgtt cagcagcccc | 300 |
| aagccagaac tcccaagtcc tgccccgggt gtcggaaagc tgaagcttct gcctgaggaa | 360 |
| cgtctcagga acctctttc ctacgatgga atctgtcctc ttgcttgggg caggctgttc | 420 |
| ccgaaaaatc agtgc当地aaatg tgaagccaaac aaagagcagg gaggttacaa ctttcaggat | 480 |
| gcctatggcc agagcgacct cccagcgggtg aaagcgagga gacaggctga atttgaacac | 540 |
| ccttgctga | 549 |

<210> 24

<211> 182

<212> PRT

<213> Homo sapiens

<400> 24

| | |
|---|--|
| Met Gly Ser Ala Gly Phe Ser Val Gly Lys Phe His Val Glu Val Ala | |
| 1 5 10 15 | |
| Ser Arg Gly Arg Glu Cys Val Ser Gly Thr Pro Glu Cys Gly Asn Arg | |
| 20 25 30 | |
| Leu Gly Ser Ala Gly Phe Gly Asp Leu Cys Leu Glu Leu Arg Gly Ala | |
| 35 40 45 | |
| Asp Pro Ala Trp Gly Pro Phe Ala Ala His Gly Arg Ser Arg Arg Gln | |
| 50 55 60 | |
| Gly Ser Arg Phe Leu Trp Leu Leu Lys Ile Leu Val Ile Ile Leu Val | |
| 65 70 75 80 | |
| Leu Gly Ile Val Gly Phe Met Phe Gly Ser Met Phe Leu Gln Ala Val | |
| 85 90 95 | |
| Phe Ser Ser Pro Lys Pro Glu Leu Pro Ser Pro Ala Pro Gly Val Gln | |
| 100 105 110 | |
| Lys Leu Lys Leu Leu Pro Glu Glu Arg Leu Arg Asn Leu Phe Ser Tyr | |
| 115 120 125 | |
| Asp Gly Ile Cys Pro Leu Ala Cys Phe Arg Leu Phe Pro Lys Asn Gln | |
| 130 135 140 | |
| Cys Lys Cys Glu Ala Asn Lys Glu Gln Gly Tyr Asn Phe Gln Asp | |
| 145 150 155 160 | |
| Ala Tyr Gly Gln Ser Asp Leu Pro Ala Val Lys Ala Arg Arg Gln Ala | |
| 165 170 175 | |
| Glu Phe Glu His Pro Cys | |
| 180 | |

<210> 25

<211> 369

<212> DNA

<213> Homo sapiens

<400> 25

| | |
|--|-----|
| atgacttcgg gcggctcgag atttctgtgg ctccctcaaga tattggcat aatcctggta | 60 |
| cttggcatg ttggatttat gttcggaaagc atttcccttc aaggcgtgtt cagcagcccc | 120 |
| aagccagaac tcccaagtcc tgccccgggt gtcggaaagc tgaagcttct gcctgaggaa | 180 |
| cgtctcagga acctctttc ctacgatgga atctgtcctc ttgcttgggg caggctgttc | 240 |
| ccgaaaaatc agtgc当地aaatg tgaagccaaac aaagagcagg gaggttacaa ctttcaggat | 300 |
| gcctatggcc agagcgacct cccagcgggtg aaagcgagga gacaggctga atttgaacac | 360 |
| ccttgctga | 369 |

<210> 26

<211> 122

<212> PRT

<213> Homo sapiens

<400> 26

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Thr | Ser | Gly | Gly | Ser | Arg | Phe | Leu | Trp | Leu | Leu | Lys | Ile | Leu | Val |
| 1 | | | | | | | | | | | | | | | 15 |
| Ile | Ile | Leu | Val | Leu | Gly | Ile | Val | Gly | Phe | Met | Phe | Gly | Ser | Met | Phe |
| | | | | | | | | | | | | | | | 30 |
| Leu | Gln | Ala | Val | Phe | Ser | Ser | Pro | Lys | Pro | Glu | Leu | Pro | Ser | Pro | Ala |
| | | | | | | | | | | | | | | | 45 |
| Pro | Gly | Val | Gln | Lys | Leu | Lys | Leu | Leu | Pro | Glu | Glu | Arg | Leu | Arg | Asn |
| | | | | | | | | | | | | | | | 50 |
| Leu | Phe | Ser | Tyr | Asp | Gly | Ile | Cys | Pro | Leu | Ala | Cys | Phe | Arg | Leu | Phe |
| | | | | | | | | | | | | | | | 60 |
| Pro | Lys | Asn | Gln | Cys | Lys | Cys | Glu | Ala | Asn | Lys | Glu | Gln | Gly | Tyr | |
| | | | | | | | | | | | | | | | 85 |
| Asn | Phe | Gln | Asp | Ala | Tyr | Gly | Gln | Ser | Asp | Leu | Pro | Ala | Val | Lys | Ala |
| | | | | | | | | | | | | | | | 100 |
| Arg | Arg | Gln | Ala | Glu | Phe | Glu | His | Pro | Cys | | | | | | 110 |
| | | | | | | | | | | | | | | | 115 |
| | | | | | | | | | | | | | | | 120 |

<210> 27

<211> 531

<212> DNA

<213> Homo sapiens

<400> 27

| | | | | | | |
|-------------|-------------|-------------|------------|-------------|-------------|-----|
| atggggagcg | ctggctttc | cgtggaaaaa | ttccacgtgg | agggtggcctc | tcgcggccgg | 60 |
| gaatgtgtct | cggggacgccc | cgagtgtggg | aatcggctcg | ggagtgccgg | cttcggggat | 120 |
| ctctgcttgg | aactcagagg | cgctgaccca | gcctggggcc | cgtttgcgtc | ccacggggagg | 180 |
| agccgcccgtc | agggctcgag | atttctgtgg | ctcctcaaga | tattggtcat | aatcctggta | 240 |
| cttggcattg | ttggatttat | gttcggaaagc | atgttccttc | aagcagtgtt | cagcagcccc | 300 |
| aagccagaac | tcccaagtcc | tgccccgggt | gtccagaagc | tgaagcttct | gcctgaggaa | 360 |
| cgtctcagga | acctctttc | ctacgatgga | atctggctgt | tcccgaaaaa | tcagtgc当地 | 420 |
| tgtgaagcca | acaaaagagca | gggaggttac | aactttcagg | atgcctatgg | ccagagcgac | 480 |
| ctcccagcgg | tgaaaagcgg | gagacagggct | gaatttgaac | acccttgctg | a | 531 |

<210> 28

<211> 176

<212> PRT

<213> Homo sapiens

<400> 28

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Gly | Ser | Ala | Gly | Phe | Ser | Val | Gly | Lys | Phe | His | Val | Glu | Val | Ala |
| 1 | | | | | | | | | | | | | | | 15 |
| Ser | Arg | Gly | Arg | Glu | Cys | Val | Ser | Gly | Thr | Pro | Glu | Cys | Gly | Asn | Arg |
| | | | | | | | | | | | | | | | 30 |
| Leu | Gly | Ser | Ala | Gly | Phe | Gly | Asp | Leu | Cys | Leu | Glu | Leu | Arg | Gly | Ala |
| | | | | | | | | | | | | | | | 45 |
| Asp | Pro | Ala | Trp | Gly | Pro | Phe | Ala | Ala | His | Gly | Arg | Ser | Arg | Arg | Gln |
| | | | | | | | | | | | | | | | 50 |
| Gly | Ser | Arg | Phe | Leu | Trp | Leu | Leu | Lys | Ile | Leu | Val | Ile | Ile | Leu | Val |
| | | | | | | | | | | | | | | | 65 |
| Leu | Gly | Ile | Val | Gly | Phe | Met | Phe | Gly | Ser | Met | Phe | Leu | Gln | Ala | Val |
| | | | | | | | | | | | | | | | 85 |
| Phe | Ser | Ser | Pro | Lys | Pro | Glu | Leu | Pro | Ser | Pro | Ala | Pro | Gly | Val | Gln |
| | | | | | | | | | | | | | | | 100 |
| Lys | Leu | Lys | Leu | Leu | Pro | Glu | Glu | Arg | Leu | Arg | Asn | Leu | Phe | Ser | Tyr |
| | | | | | | | | | | | | | | | 115 |
| | | | | | | | | | | | | | | | 120 |
| | | | | | | | | | | | | | | | 125 |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Gly | Ile | Trp | Leu | Phe | Pro | Lys | Asn | Gln | Cys | Lys | Cys | Glu | Ala | Asn |
| 130 | | | | | | | | | | | | | | | |
| | | | | | 135 | | | | | | | | | 140 | |
| Lys | Glu | Gln | Gly | Gly | Tyr | Asn | Phe | Gln | Asp | Ala | Tyr | Gly | Gln | Ser | Asp |
| 145 | | | | | 150 | | | | | | | | | | 160 |
| Leu | Pro | Ala | Val | Lys | Ala | Arg | Arg | Gln | Ala | Glu | Phe | Glu | His | Pro | Cys |
| | | | | 165 | | | | | | | 170 | | | | 175 |

<210> 29
 <211> 351
 <212> DNA
 <213> Homo sapiens

<400> 29
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 aagccagaac tcccaagtcc tgccccgggt gtccagaagc tgaagcttct gcctgaggaa 180
 cgtctcagga acctctttc ctacgatgga atctggctgt tcccgaaaaa tcagtgc当地 240
 tgtgaagcca acaaagagca gggaggttac aactttcagg atgcctatgg ccagagcgac 300
 ctcccagcgg tgaaagcggag gagacaggct gaatttgaac acccttgctg a 351

<210> 30
 <211> 116
 <212> PRT
 <213> Homo sapiens

<400> 30
 Met Thr Ser Gly Gly Ser Arg Phe Leu Trp Leu Leu Lys Ile Leu Val
 1 5 10 15
 Ile Ile Leu Val Leu Gly Ile Val Gly Phe Met Phe Gly Ser Met Phe
 20 25 30
 Leu Gln Ala Val Phe Ser Ser Pro Lys Pro Glu Leu Pro Ser Pro Ala
 35 40 45
 Pro Gly Val Gln Lys Leu Lys Leu Leu Pro Glu Glu Arg Leu Arg Asn
 50 55 60
 Leu Phe Ser Tyr Asp Gly Ile Trp Leu Phe Pro Lys Asn Gln Cys Lys
 65 70 75 80
 Cys Glu Ala Asn Lys Glu Gln Gly Gly Tyr Asn Phe Gln Asp Ala Tyr
 85 90 95
 Gly Gln Ser Asp Leu Pro Ala Val Lys Ala Arg Arg Gln Ala Glu Phe
 100 105 110
 Glu His Pro Cys
 115

<210> 31
 <211> 1719
 <212> DNA
 <213> Homo sapiens

<400> 31
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 ctctgcttgg aactcagagg cgctgaccca gcctggggcc cgtttgcgtc ccacggggagg 180
 agccggcgtc agggctcgag atttctgtgg ctcctcaaga tattggtcat aatcctggta 240
 cttggcattt ttggatttat gttcggaaagc atgttccttc aagcagtgtt cagcagcccc 300
 aagccagaac tcccaagtcc tgccccgggt gtccagaagc tgaagcttct gcctgaggaa 360
 cgtctcagga acctctttc ctacgatgga atctgtcctc ttgcttggtt caggctgttc 420

| | | | | | | |
|-------------|------------|-------------|------------|------------|------------|------|
| ccgaaaaatc | agtgcaaatg | tgaagccaaac | aaagagcagg | gaggttacaa | ctttcaggat | 480 |
| gccttatggcc | agagcgacct | cccagcggtg | aaagcgagga | gacaggctga | atttgaacac | 540 |
| tttcagagga | gagaagggct | gccccgccc | ctgcccctgc | tggtccagcc | caacctcccc | 600 |
| tttgggtacc | cagttcacgg | agtggaggtg | atgcccctgc | acacgggtcc | catcccaggc | 660 |
| ctccagttt | aaggaccga | tgcccccgtc | tatgaggtca | ccctgacagc | ttctctgggg | 720 |
| acactgaaca | cccttgctga | tgtcccaagac | agtgtggtgc | agggcagagg | ccagaagcag | 780 |
| ctgatcatt | ctaccagtga | ccggaagctg | ttgaagttca | ttcttcagca | cgtgacatac | 840 |
| accagcacgg | ggtaccagca | ccagaaggta | gacatgtga | gtctggagtc | caggtcctca | 900 |
| gtggccaagt | ttccagtgac | catccgccat | cctgtcatac | ccaagctata | cgaccctgga | 960 |
| ccagaaggaa | agctcagaaa | cctggttacc | attgctacca | agacttccct | ccgcccccac | 1020 |
| aagctcatga | tcatgctccg | gagtattcga | gagtttacc | cagacttgac | cgtaatagtg | 1080 |
| gctgatgaca | gccagaagcc | cctggaaatt | aaagacaacc | acgtggagta | ttacactatg | 1140 |
| cccttggga | agggtgggtt | tgctggtagg | aacctggcca | tatctcaggt | caccaccaa | 1200 |
| tacgttctct | gggtggacga | tgattttctc | ttcaacgagg | agaccaagat | tgaggtgctg | 1260 |
| gtggatgtcc | tggagaaaac | agaactggac | gtggtaggcg | gcagtgtgct | gggaaatgtg | 1320 |
| ttccagttt | agtttgtgct | ggaacagagt | gagaatgggg | cctgccttca | caagaggatg | 1380 |
| ggattttcc | aaccctgga | tggcttcccc | agctgcgtgg | tgaccagtgg | cgtggtaaac | 1440 |
| ttcttcctgg | cccacacgga | gcgactccaa | agagttggct | ttgatccccg | cctgcaacga | 1500 |
| gtggctca | cagaattctt | cattgatggg | ctagggaccc | tactcgtggg | gtcatgccc | 1560 |
| gaagtgatta | taggtcacca | gtctcggtct | ccagtggtgg | actcagaact | ggctgcccta | 1620 |
| gagaagaccc | acaatacata | ccggtccaac | accctcacc | gggtccagtt | caagctggcc | 1680 |
| cttcaactact | tcaagaacca | tctccaatgt | ggcgataaa | | | 1719 |

<210> 32

<211> 572

<212> PRT

<213> Homo sapiens

<400> 32

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Gly | Ser | Ala | Gly | Phe | Ser | Val | Gly | Lys | Phe | His | Val | Glu | Val | Ala | |
| 1 | | | | | 5 | | | | 10 | | | | | 15 | | |
| Ser | Arg | Gly | Arg | Glu | Cys | Val | Ser | Gly | Thr | Pro | Glu | Cys | Gly | Asn | Arg | |
| | | | | | | 20 | | | 25 | | | | | 30 | | |
| Leu | Gly | Ser | Ala | Gly | Phe | Gly | Asp | Leu | Cys | Leu | Glu | Leu | Arg | Gly | Ala | |
| | | | | | | | 35 | | 40 | | | | | 45 | | |
| Asp | Pro | Ala | Trp | Gly | Pro | Phe | Ala | Ala | His | Gly | Arg | Ser | Arg | Arg | Gln | |
| | | | | | | | 50 | | 55 | | | | | 60 | | |
| Gly | Ser | Arg | Phe | Leu | Trp | Leu | Leu | Lys | Ile | Leu | Val | Ile | Ile | Leu | Val | |
| | | | | | | | 65 | | 70 | | | | | 75 | | 80 |
| Leu | Gly | Ile | Val | Gly | Phe | Met | Phe | Gly | Ser | Met | Phe | Leu | Gln | Ala | Val | |
| | | | | | | | 85 | | | 90 | | | | 95 | | |
| Phe | Ser | Ser | Pro | Lys | Pro | Glu | Leu | Pro | Ser | Pro | Ala | Pro | Gly | Val | Gln | |
| | | | | | | | 100 | | 105 | | | | | 110 | | |
| Lys | Leu | Lys | Leu | Leu | Pro | Glu | Glu | Arg | Leu | Arg | Asn | Leu | Phe | Ser | Tyr | |
| | | | | | | | 115 | | 120 | | | | | 125 | | |
| Asp | Gly | Ile | Cys | Pro | Leu | Ala | Cys | Phe | Arg | Leu | Phe | Pro | Lys | Asn | Gln | |
| | | | | | | | 130 | | 135 | | | | | 140 | | |
| Cys | Lys | Cys | Glu | Ala | Asn | Lys | Glu | Gln | Gly | Gly | Tyr | Asn | Phe | Gln | Asp | |
| | | | | | | | 145 | | 150 | | | | | 155 | | 160 |
| Ala | Tyr | Gly | Gln | Ser | Asp | Leu | Pro | Ala | Val | Lys | Ala | Arg | Arg | Gln | Ala | |
| | | | | | | | 165 | | | 170 | | | | 175 | | |
| Glu | Phe | Glu | His | Phe | Gln | Arg | Arg | Glu | Gly | Leu | Pro | Arg | Pro | Leu | Pro | |
| | | | | | | | 180 | | 185 | | | | | 190 | | |
| Leu | Leu | Val | Gln | Pro | Asn | Leu | Pro | Phe | Gly | Tyr | Pro | Val | His | Gly | Val | |
| | | | | | | | 195 | | 200 | | | | | 205 | | |
| Glu | Val | Met | Pro | Leu | His | Thr | Val | Pro | Ile | Pro | Gly | Leu | Gln | Phe | Glu | |

| 210 | 215 | 220 |
|---|---|---|
| Gly | Pro Asp Ala Pro Val | Tyr Glu Val Thr Leu Thr Ala Ser Leu Gly |
| 225 | 230 | 235 |
| Thr Leu Asn Thr | Leu Ala Asp Val Pro Asp Ser Val Val Gln | Gly Arg |
| | 245 | 250 |
| Gly Gln Lys Gln | Leu Ile Ile Ser Thr Ser Asp Arg Lys | Leu Leu Lys |
| | 260 | 265 |
| Phe Ile Leu Gln His Val | Thr Tyr Thr Ser Thr Gly | Tyr Gln His Gln |
| | 275 | 280 |
| 285 | | |
| Lys Val Asp Ile Val Ser | Leu Glu Ser Arg Ser Ser Val Ala Lys | Phe |
| 290 | 295 | 300 |
| Pro Val Thr Ile Arg His | Pro Val Ile Pro Lys | Leu Tyr Asp Pro Gly |
| 305 | 310 | 315 |
| 320 | | |
| Pro Glu Arg Lys | Leu Arg Asn Leu Val | Thr Ile Ala Thr Lys Thr Phe |
| | 325 | 330 |
| 335 | | |
| Leu Arg Pro His Lys | Leu Met Ile Met | Leu Arg Ser Ile Arg Glu Tyr |
| | 340 | 345 |
| 350 | | |
| Tyr Pro Asp Leu Thr Val | Ile Val Ala Asp Asp Ser | Gln Lys Pro Leu |
| | 355 | 360 |
| 365 | | |
| Glu Ile Lys Asp Asn His | Val Glu Tyr Tyr | Thr Met Pro Phe Gly Lys |
| | 370 | 375 |
| 380 | | |
| Gly Trp Phe Ala Gly Arg Asn | Leu Ala Ile Ser | Gln Val Thr Thr Lys |
| 385 | 390 | 395 |
| 400 | | |
| Tyr Val Leu Trp Val Asp Asp Asp | Phe Leu Phe Asn | Glu Glu Thr Lys |
| | 405 | 410 |
| 415 | | |
| Ile Glu Val Leu Val Asp Val | Leu Glu Lys | Thr Glu Leu Asp Val Val |
| | 420 | 425 |
| 430 | | |
| Gly Gly Ser Val Leu Gly Asn Val | Phe Gln Phe Lys | Leu Leu Leu Glu |
| | 435 | 440 |
| 445 | | |
| Gln Ser Glu Asn Gly Ala Cys | Leu His Lys Arg Met | Gly Phe Phe Gln |
| | 450 | 455 |
| 460 | | |
| Pro Leu Asp Gly Phe Pro Ser Cys | Val Val Thr Ser Gly Val Val Asn | |
| | 465 | 470 |
| 480 | | |
| Phe Phe Leu Ala His Thr Glu Arg | Leu Gln Arg Val Gly Phe Asp Pro | |
| | 485 | 490 |
| 495 | | |
| Arg Leu Gln Arg Val Ala His Ser | Glu Phe Phe Ile Asp Gly | Leu Gly |
| | 500 | 505 |
| 510 | | |
| Thr Leu Leu Val Gly Ser Cys | Pro Glu Val Ile Ile Gly | His Gln Ser |
| | 515 | 520 |
| 525 | | |
| Arg Ser Pro Val Val Asp Ser | Glu Leu Ala Ala | Leu Glu Lys Thr Tyr |
| | 530 | 535 |
| 540 | | |
| Asn Thr Tyr Arg Ser Asn Thr | Leu Thr Arg Val Gln Phe Lys | Leu Ala |
| | 545 | 550 |
| 560 | | |
| Leu His Tyr Phe Lys Asn His Leu Gln Cys | Ala Ala | |
| | 565 | 570 |

<210> 33

<211> 1539

<212> DNA

<213> Homo sapiens

<400> 33

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| atgacttcgg | gcggctcgag | atttctgtgg | ctcctcaaga | tattggtcat | aatcctggta | 60 |
| cttggcattg | ttggatttat | gttcggaaagc | atgttccttc | aagcagtgtt | cagcagcccc | 120 |
| aagccagaac | tcccaagtcc | tgccccgggt | gtccagaagc | tgaagcttct | gcctgaggaa | 180 |
| cgtctcagga | acctctttc | ctacgatgga | atctgtcctc | ttgcttggtt | caggctgttc | 240 |

| | | | | | | | | | | | | |
|-------------|--------|-----|-----|-------|----|-------|-----|------|--------|-----|--------|------|
| ccgaaaaatc | agtcaa | atg | tga | aggcc | aa | agagc | agg | gagg | ttacaa | ctt | caggat | 300 |
| gcctatggcc | agagc | gac | ct | ccc | ag | cggt | g | aa | agcgag | ga | cagg | 360 |
| tttc | agag | gag | g | cc | cc | cc | cc | cc | tt | cc | cc | 420 |
| tttgggtacc | cagt | cc | ac | gg | at | gg | gg | tc | at | cc | cc | 480 |
| ctcc | ag | tt | tt | gg | at | gg | gg | tc | ac | cc | cc | 540 |
| acactgaaca | cc | ctt | g | cc | cc | cc | cc | cc | cc | cc | cc | 600 |
| ctgatcattt | ct | acc | at | gt | cc | cc | cc | cc | cc | cc | cc | 660 |
| accagcacgg | gg | tac | ca | cc | cc | cc | cc | cc | cc | cc | cc | 720 |
| gtggccaagt | tt | cc | at | gt | cc | cc | cc | cc | cc | cc | cc | 780 |
| ccagagagga | ag | ctc | ag | aa | cc | cc | cc | cc | cc | cc | cc | 840 |
| aagctcatga | tc | at | g | ct | cc | cc | cc | cc | cc | cc | cc | 900 |
| gctgatgaca | gc | c | ca | ag | aa | at | gg | tt | ac | at | at | 960 |
| cccttggga | ag | gg | tt | gg | tt | gg | tt | gg | tt | gg | tt | 1020 |
| tacgttctt | gg | gt | gg | ac | ga | cc | tt | cc | tt | cc | tt | 1080 |
| gtggatgtcc | tg | gg | aa | aa | ac | tt | gg | tt | gg | cc | cc | 1140 |
| ttccagtttta | at | tt | tt | gt | tt | gg | tt | gg | tt | cc | tt | 1200 |
| ggat | ttt | cc | cc | cc | cc | cc | cc | cc | cc | cc | cc | 1260 |
| ttcttc | cc | cc | cc | cc | cc | cc | cc | cc | cc | cc | cc | 1320 |
| gtggctca | c | ca | tt | c | tt | gg | tt | gg | tt | cc | tt | 1380 |
| gaagtgatta | ta | gg | gt | cc | ac | cc | cc | cc | cc | cc | cc | 1440 |
| gagaagac | ac | aa | at | ac | ta | cc | cc | cc | cc | cc | cc | 1500 |
| cttca | ct | ac | ta | ct | cc | aa | tt | cc | cc | cc | cc | 1539 |

<210> 34
 <211> 512
 <212> PRT
 <213> Homo sapiens

<400> 34
 Met Thr Ser Gly Gly Ser Arg Phe Leu Trp Leu Leu Lys Ile Leu Val
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 Ile Ile Leu Val Leu Gly Ile Val Gly Phe Met Phe Gly Ser Met Phe
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 Leu Gln Ala Val Phe Ser Ser Pro Lys Pro Glu Leu Pro Ser Pro Ala
 35 40 45
 Pro Gly Val Gln Lys Leu Lys Leu Leu Pro Glu Glu Arg Leu Arg Asn
 50 55 60
 Leu Phe Ser Tyr Asp Gly Ile Cys Pro Leu Ala Cys Phe Arg Leu Phe
 65 70 75 80
 Pro Lys Asn Gln Cys Lys Cys Glu Ala Asn Lys Glu Gln Gly Tyr
 85 90 95
 Asn Phe Gln Asp Ala Tyr Gly Gln Ser Asp Leu Pro Ala Val Lys Ala
 100 105 110
 Arg Arg Gln Ala Glu Phe Glu His Phe Gln Arg Arg Glu Gly Leu Pro
 115 120 125
 Arg Pro Leu Pro Leu Leu Val Gln Pro Asn Leu Pro Phe Gly Tyr Pro
 130 135 140
 Val His Gly Val Glu Val Met Pro Leu His Thr Val Pro Ile Pro Gly
 145 150 155 160
 Leu Gln Phe Glu Gly Pro Asp Ala Pro Val Tyr Glu Val Thr Leu Thr
 165 170 175
 Ala Ser Leu Gly Thr Leu Asn Thr Leu Ala Asp Val Pro Asp Ser Val
 180 185 190
 Val Gln Gly Arg Gly Gln Lys Gln Leu Ile Ile Ser Thr Ser Asp Arg
 195 200 205
 Lys Leu Leu Lys Phe Ile Leu Gln His Val Thr Tyr Thr Ser Thr Gly

| 210 | 215 | 220 | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Tyr | Gln | His | Gln | Lys | Val | Asp | Ile | Val | Ser | Leu | Glu | Ser | Arg | Ser | Ser |
| 225 | | | | | 230 | | | | 235 | | | | | | 240 |
| Val | Ala | Lys | Phe | Pro | Val | Thr | Ile | Arg | His | Pro | Val | Ile | Pro | Lys | Leu |
| | | | | | 245 | | | | 250 | | | | | | 255 |
| Tyr | Asp | Pro | Gly | Pro | Glu | Arg | Lys | Leu | Arg | Asn | Leu | Val | Thr | Ile | Ala |
| | | | | | 260 | | | 265 | | | | | | | 270 |
| Thr | Lys | Thr | Phe | Leu | Arg | Pro | His | Lys | Leu | Met | Ile | Met | Leu | Arg | Ser |
| | | | | | 275 | | | 280 | | | | | | | 285 |
| Ile | Arg | Glu | Tyr | Tyr | Pro | Asp | Leu | Thr | Val | Ile | Val | Ala | Asp | Asp | Ser |
| | | | | | 290 | | | 295 | | | | | | | 300 |
| Gln | Lys | Pro | Leu | Glu | Ile | Lys | Asp | Asn | His | Val | Glu | Tyr | Tyr | Thr | Met |
| 305 | | | | | 310 | | | | 315 | | | | | | 320 |
| Pro | Phe | Gly | Lys | Gly | Trp | Phe | Ala | Gly | Arg | Asn | Leu | Ala | Ile | Ser | Gln |
| | | | | | 325 | | | | 330 | | | | | | 335 |
| Val | Thr | Thr | Lys | Tyr | Val | Leu | Trp | Val | Asp | Asp | Asp | Phe | Leu | Phe | Asn |
| | | | | | 340 | | | 345 | | | | | | | 350 |
| Glu | Glu | Thr | Lys | Ile | Glu | Val | Leu | Val | Asp | Val | Leu | Glu | Lys | Thr | Glu |
| | | | | | 355 | | | 360 | | | | | | | 365 |
| Leu | Asp | Val | Val | Gly | Gly | Ser | Val | Leu | Gly | Asn | Val | Phe | Gln | Phe | Lys |
| | | | | | 370 | | | 375 | | | | | | | 380 |
| Leu | Leu | Leu | Glu | Gln | Ser | Glu | Asn | Gly | Ala | Cys | Leu | His | Lys | Arg | Met |
| 385 | | | | | 390 | | | | 395 | | | | | | 400 |
| Gly | Phe | Phe | Gln | Pro | Leu | Asp | Gly | Phe | Pro | Ser | Cys | Val | Val | Thr | Ser |
| | | | | | 405 | | | | 410 | | | | | | 415 |
| Gly | Val | Val | Asn | Phe | Phe | Leu | Ala | His | Thr | Glu | Arg | Leu | Gln | Arg | Val |
| | | | | | 420 | | | 425 | | | | | | | 430 |
| Gly | Phe | Asp | Pro | Arg | Leu | Gln | Arg | Val | Ala | His | Ser | Glu | Phe | Phe | Ile |
| | | | | | 435 | | | 440 | | | | | | | 445 |
| Asp | Gly | Leu | Gly | Thr | Leu | Leu | Val | Gly | Ser | Cys | Pro | Glu | Val | Ile | Ile |
| | | | | | 450 | | | 455 | | | | | | | 460 |
| Gly | His | Gln | Ser | Arg | Ser | Pro | Val | Val | Asp | Ser | Glu | Leu | Ala | Ala | Leu |
| 465 | | | | | 470 | | | | 475 | | | | | | 480 |
| Glu | Lys | Thr | Tyr | Asn | Thr | Tyr | Arg | Ser | Asn | Thr | Leu | Thr | Arg | Val | Gln |
| | | | | | 485 | | | | 490 | | | | | | 495 |
| Phe | Lys | Leu | Ala | Leu | His | Tyr | Phe | Lys | Asn | His | Leu | Gln | Cys | Ala | Ala |
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<210> 35

<211> 1701

<212> DNA

<213> Homo sapiens

<400> 35

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| gaatgtgtct | cggggacgccc | cgagtgtggg | aatcggtctcg | ggagtgccgg | cttcggggat | 120 |
| ctctgcttgg | aactcagagg | cgctgaccca | gcctggggcc | cgtttgcgtgc | ccacggggagg | 180 |
| agccgcgc | agggctcgag | atttctgtgg | ctcttcaaga | tattggtcat | aatcctggta | 240 |
| cttggcattt | ttggattttat | gttcggaaagc | atttcccttc | aagcagtgtt | cagcagcccc | 300 |
| aagccagaac | tcccaagtcc | tgccccgggt | gtccagaagc | tgaagttct | gcctgaggaa | 360 |
| cgtctcagga | accttttttc | ctacgatgga | atctggctgt | tcccggaaaa | tcagtgc当地 | 420 |
| tgtgaagcc | acaaagagca | gggaggttac | aactttcagg | atgcctatgg | ccagagcgc当地 | 480 |
| ctccccaggg | tgaaagcgag | gagacaggt | gaatttgaac | actttcagag | gagagaaggg | 540 |
| ctgccccccc | cactgccccct | gctggtcag | cccaacctcc | cctttggta | cccagtc当地 | 600 |
| ggagtggagg | tgatccccct | gcacacggtt | cccatcccag | gcctccagtt | tgaaggaccc | 660 |
| gatccccccg | tctatgaggt | caccctgaca | gcttctctgg | ggacactgaa | cacccttgct | 720 |

| | | | |
|------------------------|-----------------------|-----------------------|------|
| gatgtcccaag acagtgtggc | gcagggcaga ggccagaagc | agctgatcat ttctaccagt | 780 |
| gaccggaaagc | tgttgaagtt cattcttcag | cacgtgacat acaccagcac | 840 |
| caccagaagg | tagacatagt gaggctggag | tccaggccct cagtgccaa | 900 |
| accatccgccc | atcctgtcat acccaagcta | tacgaccctg gaccagagag | 960 |
| aacctggta | ccattgtac caagacttc | ctccgcccc acaagctcat | 1020 |
| cgagtttgc | gagagatcca cccagacttg | accgtaatag tggctgatga | 1080 |
| cccctggaaa | ttaaagacaa ccacgtggag | tattacacta tgcccttgg | 1140 |
| tttgctggta | ggaacctggc | catatctcag gtcaccacca | 1200 |
| gatgatttc | tcttcaacga | ggagaccaag attgaggtgc | 1260 |
| acagaactgg | acgtgttagg | cgccgtgtg ctggaaatg | 1320 |
| ctggaaacaga | gtgagaatgg | ggcctgcctt cacaagagga | 1380 |
| gatggcttcc | ccagctgcgt | ggtgaccagt ggcgtggta | 1440 |
| gagcgactcc | aaagagttgg | cttgcgtccc cgccgtcaac | 1500 |
| ttcattgatg | ggctagggac | cctactcggt gggctatgcc | 1560 |
| cagtctcggt | ctccagtggt | ggactcagaa ctggctgccc | 1620 |
| taccgggtcca | acaccctcac | ccgggtccag ttcaagctgg | 1680 |
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<210> 36

<211> 566

<212> PRT

<213> Homo sapiens

<400> 36

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| 1 | | | | | 5 | | | | 10 | | | | 15 | | |
| Ser | Arg | Gly | Arg | Glu | Cys | Val | Ser | Gly | Thr | Pro | Glu | Cys | Gly | Asn | Arg |
| | | | | | | 20 | | | 25 | | | | 30 | | |
| Leu | Gly | Ser | Ala | Gly | Phe | Gly | Asp | Leu | Cys | Leu | Glu | Leu | Arg | Gly | Ala |
| | | | | | | | 35 | | 40 | | | 45 | | | |
| Asp | Pro | Ala | Trp | Gly | Pro | Phe | Ala | Ala | His | Gly | Arg | Ser | Arg | Arg | Gln |
| | | | | | | | 50 | | 55 | | | 60 | | | |
| Gly | Ser | Arg | Phe | Leu | Trp | Leu | Leu | Lys | Ile | Leu | Val | Ile | Ile | Leu | Val |
| | | | | | | | 65 | | 70 | | | 75 | | | 80 |
| Leu | Gly | Ile | Val | Gly | Phe | Met | Phe | Gly | Ser | Met | Phe | Leu | Gln | Ala | Val |
| | | | | | | | 85 | | | 90 | | | 95 | | |
| Phe | Ser | Ser | Pro | Lys | Pro | Glu | Leu | Pro | Ser | Pro | Ala | Pro | Gly | Val | Gln |
| | | | | | | | 100 | | 105 | | | 110 | | | |
| Lys | Leu | Lys | Leu | Leu | Pro | Glu | Glu | Arg | Leu | Arg | Asn | Leu | Phe | Ser | Tyr |
| | | | | | | | 115 | | 120 | | | 125 | | | |
| Asp | Gly | Ile | Trp | Leu | Phe | Pro | Lys | Asn | Gln | Cys | Lys | Cys | Glu | Ala | Asn |
| | | | | | | | 130 | | 135 | | | 140 | | | |
| Lys | Glu | Gln | Gly | Gly | Tyr | Asn | Phe | Gln | Asp | Ala | Tyr | Gly | Gln | Ser | Asp |
| | | | | | | | 145 | | 150 | | | 155 | | | 160 |
| Leu | Pro | Ala | Val | Lys | Ala | Arg | Arg | Gln | Ala | Glu | Phe | Glu | His | Phe | Gln |
| | | | | | | | 165 | | 170 | | | 175 | | | |
| Arg | Arg | Glu | Gly | Leu | Pro | Arg | Pro | Leu | Pro | Leu | Leu | Val | Gln | Pro | Asn |
| | | | | | | | 180 | | 185 | | | 190 | | | |
| Leu | Pro | Phe | Gly | Tyr | Pro | Val | His | Gly | Val | Glu | Val | Met | Pro | Leu | His |
| | | | | | | | 195 | | 200 | | | 205 | | | |
| Thr | Val | Pro | Ile | Pro | Gly | Leu | Gln | Phe | Glu | Gly | Pro | Asp | Ala | Pro | Val |
| | | | | | | | 210 | | 215 | | | 220 | | | |
| Tyr | Glu | Val | Thr | Leu | Thr | Ala | Ser | Leu | Gly | Thr | Leu | Asn | Thr | Leu | Ala |
| | | | | | | | 225 | | 230 | | | 235 | | | 240 |
| Asp | Val | Pro | Asp | Ser | Val | Val | Gln | Gly | Arg | Gly | Gln | Lys | Gln | Leu | Ile |
| | | | | | | | 245 | | 250 | | | 255 | | | |

Ile Ser Thr Ser Asp Arg Lys Leu Leu Lys Phe Ile Leu Gln His Val
 260 265 270
 Thr Tyr Thr Ser Thr Gly Tyr Gln His Gln Lys Val Asp Ile Val Ser
 275 280 285
 Leu Glu Ser Arg Ser Ser Val Ala Lys Phe Pro Val Thr Ile Arg His
 290 295 300
 Pro Val Ile Pro Lys Leu Tyr Asp Pro Gly Pro Glu Arg Lys Leu Arg
 305 310 315 320
 Asn Leu Val Thr Ile Ala Thr Lys Thr Phe Leu Arg Pro His Lys Leu
 325 330 335
 Met Ile Met Leu Arg Ser Ile Arg Glu Tyr Tyr Pro Asp Leu Thr Val
 340 345 350
 Ile Val Ala Asp Asp Ser Gln Lys Pro Leu Glu Ile Lys Asp Asn His
 355 360 365
 Val Glu Tyr Tyr Thr Met Pro Phe Gly Lys Gly Trp Phe Ala Gly Arg
 370 375 380
 Asn Leu Ala Ile Ser Gln Val Thr Thr Lys Tyr Val Leu Trp Val Asp
 385 390 395 400
 Asp Asp Phe Leu Phe Asn Glu Glu Thr Lys Ile Glu Val Leu Val Asp
 405 410 415
 Val Leu Glu Lys Thr Glu Leu Asp Val Val Gly Gly Ser Val Leu Gly
 420 425 430
 Asn Val Phe Gln Phe Lys Leu Leu Glu Gln Ser Glu Asn Gly Ala
 435 440 445
 Cys Leu His Lys Arg Met Gly Phe Phe Gln Pro Leu Asp Gly Phe Pro
 450 455 460
 Ser Cys Val Val Thr Ser Gly Val Val Asn Phe Phe Leu Ala His Thr
 465 470 475 480
 Glu Arg Leu Gln Arg Val Gly Phe Asp Pro Arg Leu Gln Arg Val Ala
 485 490 495
 His Ser Glu Phe Phe Ile Asp Gly Leu Gly Thr Leu Leu Val Gly Ser
 500 505 510
 Cys Pro Glu Val Ile Ile Gly His Gln Ser Arg Ser Pro Val Val Asp
 515 520 525
 Ser Glu Leu Ala Ala Leu Glu Lys Thr Tyr Asn Thr Tyr Arg Ser Asn
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<210> 37
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 <212> DNA
 <213> Homo sapiens

<400> 37

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| gacttcgggc | gggtgagtgt | cctcggggca | gagcaaaggc | gagaggtgaa | acttcgggag | 120 |
| cagggagcgc | cgcgggtcct | ttctggcgtc | tgcagagcgg | gcaggtgctg | gggacgcaga | 180 |
| cgcggagcc | agggagcggg | cggttggagt | cttaagtcca | accggttccc | cgcataagggtg | 240 |
| gctgcagagg | cgaggtgacg | gcgcgtcg | aacgaactct | gcaccccccag | aatggggag | 300 |
| cgctggctt | tccgtggaa | aattccacgt | ggaggtggcc | tctcgccg | ggaaatgtgt | 360 |
| ctcggggacg | cccgagtg | ggaatcgct | cgggagtgcg | ggcttcgggg | atctctgctt | 420 |
| ggaactcaga | ggcgctgacc | cagcctgggg | cccgttgt | gcccacggga | ggagccggcg | 480 |
| tcagggctcg | agattctgt | ggctcctcaa | gatattggtc | ataatcctgg | tacttggcat | 540 |

| | |
|---|------|
| tgttggattt atgttcggaa gcatgttcct tcaagcagtg ttcagcagcc ccaagccaga | 600 |
| actcccaagt cctgccccgg gtgtccagaa gctgaagctt ctgcctgagg aacgtctca | 660 |
| gaacctctt tcctacgatg gaatctggg agagactgcg ttttcttctt ttcacctaa | 720 |
| tgcacacatc ttccctgctc ctccctcaagt accatgcctt actgtgccca ttgtaccgat | 780 |
| ggttcccttg ctttcctaag cctgtgctga atgcacaagt gactgcaagc caggatgggg | 840 |
| cttggtctgt acgatccagt ctatgttctc tatagcatcc agcaaaatcc cttaaaactt | 900 |
| tcgagagcat gtatgtttt ttatcaaaa ctgcagaaaa gatgctgctt ctctgtctct | 960 |
| ctgccctcct tttatggtgg ggtgagatac aactgacagt cacgtgctc tcagattaa | 1020 |
| agaagtttagg tgcaggggac aattcaagag agaaaaagtc ttcaagccctc ctctgtccct | 1080 |
| gcttcctcc ctgttcccc ttgtctgtt gaggggccag tgcaagggac tccagggtct | 1140 |
| catcatctca gaacagttgg gtgttagaaaa gaagattttc agggtaaact acacactgg | 1200 |
| cctcttgctt gtttcaggct gttcccgaaa aatcagtgca aatgtgaagc caacaaagag | 1260 |
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| agcaggaagg aattctctt ctgcagggg tccctgggag gaactattag gaatgaaaca | 1500 |
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| tggtagatgc ctgttagtccc agctactcag taggctgaaag tgagagatc acttgagccc | 1800 |
| agaagttgaa gctgcatgag ccaggatcac accactgcac tccagcttga gaagggctgc | 1860 |
| cccgcccaact gcccctgctg gtccagccca acctccctt tgggtaccca gtccacggag | 1920 |
| tggaggtgat gcccctgcac acggttccca tcccaaggctt ccagttgaa ggacccgatg | 1980 |
| ccccctcta tgaggtcacc ctgcacagtt ctctgggac actgaacacc ctgctgtatg | 2040 |
| tcccagacag tgggtgcag ggcagaggcc agaagcagct gatcattctt accagtgacc | 2100 |
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| cact | 3244 |